

This listing of claims will replace all prior versions, and listings, of claims in the application:

LISTING OF CLAIMS:

1. - 4. (Cancel)

5. (New) In a method for fluid coking of a heavy oil containing sulfur compounds which comprised fluid coking the heavy oil in a fluidized bed coke reactor working in tandem with a fluidized bed coke burner, wherein cold coke was circulated from the reactor to the burner and partly burned in the burner at a temperature of about 645°C with emission of gaseous sulfur compounds, and the resulting hot coke was circulated from the burner to the reactor at a circulation rate sufficient to provide the heat for fluid coking of the heavy oil, the improvement comprising:

- partly burning the cold coke in the burner at a temperature from 550°C to 630°C, such that the emission of gaseous sulfur compounds is significantly reduced compared to when the temperature is about 645°C, and
- to compensate for the lower temperature of the hot coke, increasing the hot coke circulation rate from the burner to the reactor to provide the heat for fluid coking of the heavy oil.

6. (New) The method of claim 5, wherein the increased hot coke circulation rate is about 75 - 115 tons/minute.

7. (New) The method of claim 5, wherein the burner temperature is about 630°C.

8. **(New)** The method of claim 5, wherein the increased hot coke circulation rate is about 90 tons/minute.

9. **(New)** The method of claim 5, wherein the heavy oil is bitumen.

10. **(New)** The method of claim 9, wherein the method results in an SO₂ discharge of about 180 tons per 110 kB of heavy oil throughput.

11. **(New)** The method of claim 5, wherein the burner temperature is from 550 to 600°C.

12. **(New)** The method of claim 5, wherein the reactor is operated at a temperature of about 530°C.